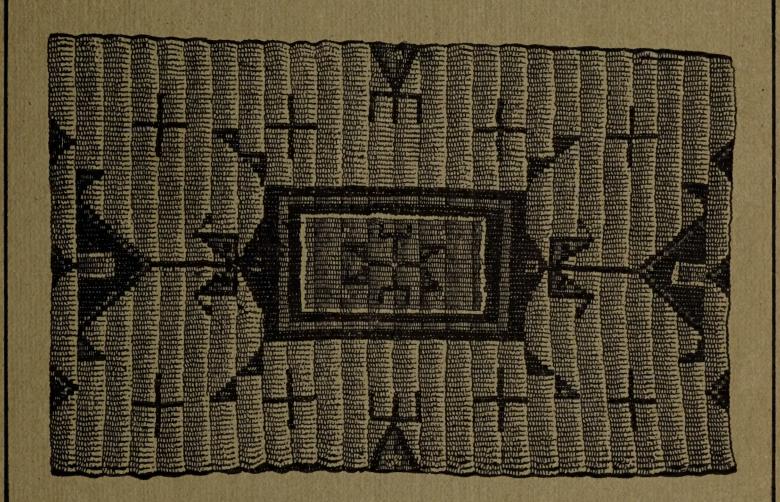
AMERICAN MUSEUM OF NATURAL HISTORY

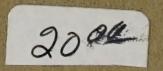
INDIAN BEADWORK

A Help for Students of Design



By CLARK WISSLER

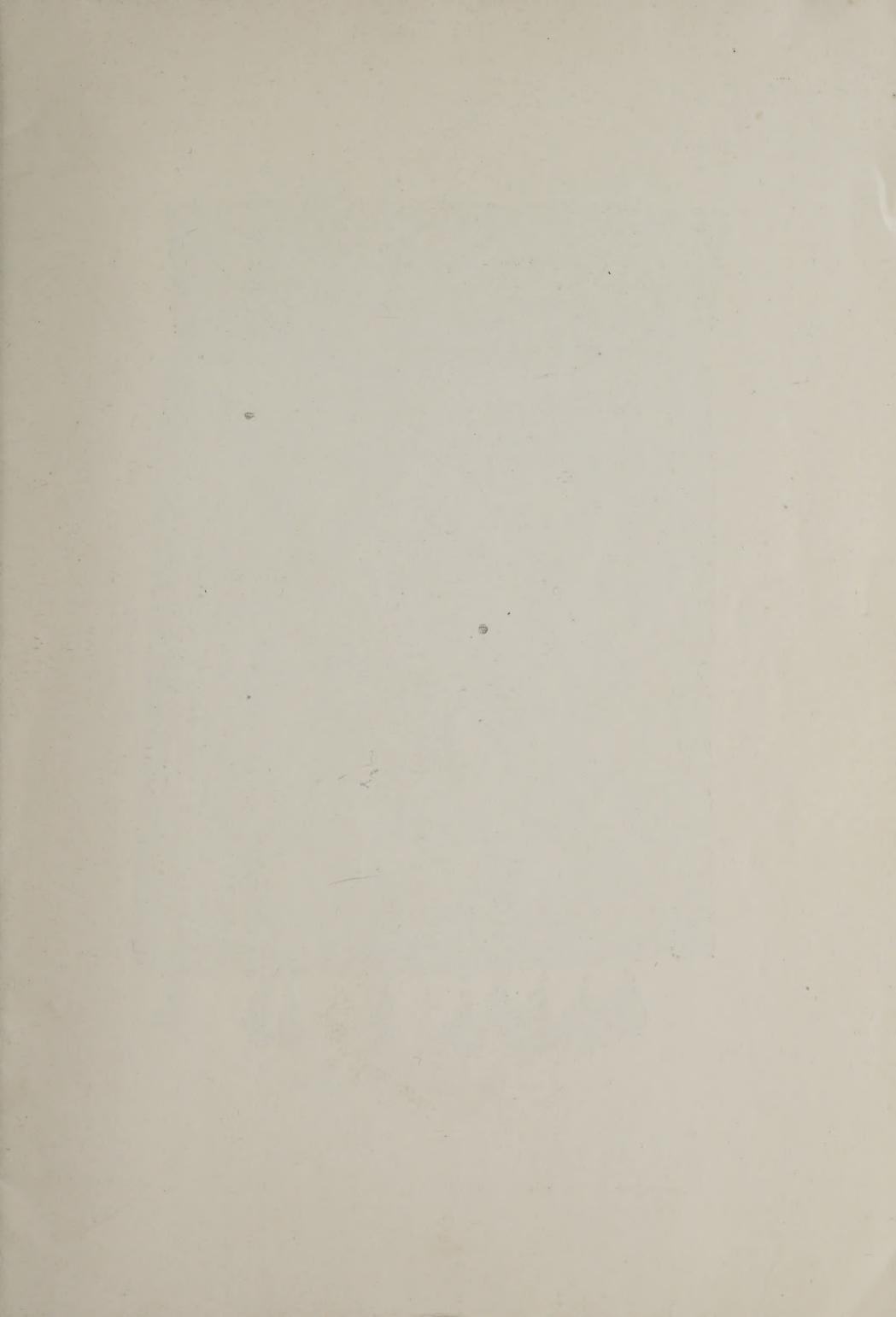
GUIDE LEAFLET No. 50



Collection of Native North American Indian Books, Historical Books, Atlases, plus other important authors and family heirloom books.

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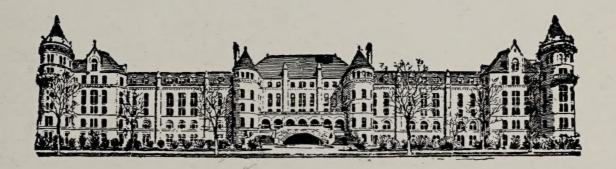




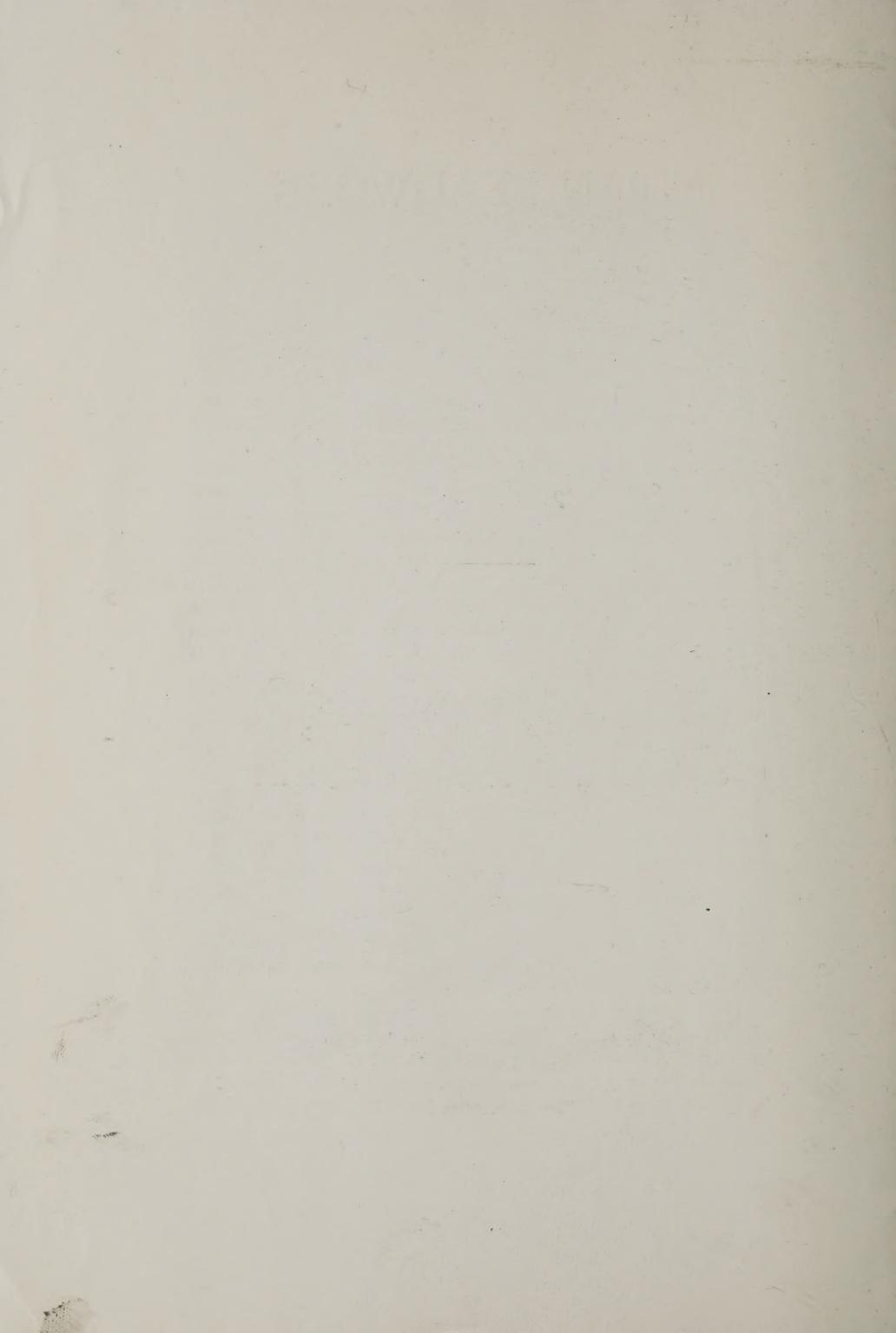
A bag of woven beadwork—Winnebago

By CLARK WISSLER

Curator of Anthropology



The American Museum of Natural History
Guide Leaflet No. 50
Second Edition
New York, May, 1927



INTRODUCTION

The most famous beadwork is that of the American Indian; in fact, no other people produce anything like it. But not all Indians produce it. The great beadwork area is the country around the Great Lakes and the Western Plains—all the States that border the Lakes, that lie between the Rocky Mountains and the Mississippi, and adjoining parts of Canada.

Beadwork is modern, that is, it originated with the introduction of glass beads after the discovery of America in 1492. Yet there was something like it before, known as porcupine quill embroidery. The latter was prehistoric and wrought in designs similar to those now seen in beads. What happened then was the substitution of European-made glass beads for quills. Thus, the truth of the matter is, that it is the glass beads that are modern and not the art of embroidery nor the designs employed. In fact some quillwork is made to this day. So we are now to study an art that was fully grown when Columbus sailed from Spain in 1492 and one which is the outgrowth of years and years of toil on the part of prehistoric Indian women.

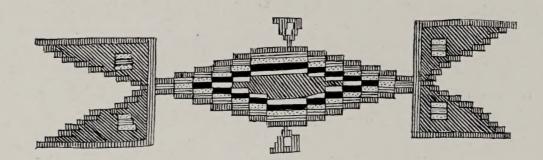
It will be necessary, therefore, for us to study both bead and quill-work. Of beadwork there are two kinds: (a) true embroidery and (b) weaving. The former was almost universal until twenty years ago. All of the examples on exhibition in the Plains Indian and the Southwest halls of the Museum are of this type. In the Woodland Hall, on the other hand, both embroidery and weaving appear, particularly among the Menomini tribe.

GUIDE TO THE COLLECTIONS

Bead and quillwork are shown in three halls on the ground floor. Turn to your left from the main entrance to the Museum, into the hall for the Indians of Eastern United States (Eastern Woodland Hall). The best bead workers represented in this hall are the Ojibway, Menomini, Sauk and Fox, and Winnebago, all living near the Mississippi. But the center of the art is west of the Mississippi among the Plains Indians, collections for which are in the next hall, west. Almost every case in that hall is a storehouse of beaded designs. Then to your right,

just within the hall for the Indians of the Southwest, are some additional examples.

Quillwork may be found among the beaded objects in the Plains Indian Hall, where both quills and beads sometimes occur on the same object, especially in the Dakota, Cheyenne, Assiniboin, and Blackfoot collections. In the Woodland Hall ordinary quillwork occurs among the Menomini collections, while woven quillwork, one of the most interesting techniques, is shown in the wall cases marked Mackenzie Area. Finally, a small amount of bead and quillwork is shown in the Jesup North Pacific Hall, north from the main entrance.



BEAD EMBROIDERY

Originally all bead embroidery was upon skin, but later cloth was substituted. In general there is but one process: the beads are strung upon a thread and this is sewed down to the skin (Fig. 1). The arrangement of these threads is determined by the style of design: when the design is geometric, the threads are laid on parallel, not unlike the weft elements in a loom; but when flowered and other curved designs are attempted the figures are built up by following the contour desired, or each unit of the design is formed independently. This can be seen in the illustrations. Sometimes floral designs are first embroidered in their proper position; then the background is filled out by laying the beads down in horizontal rows (Fig. 17).

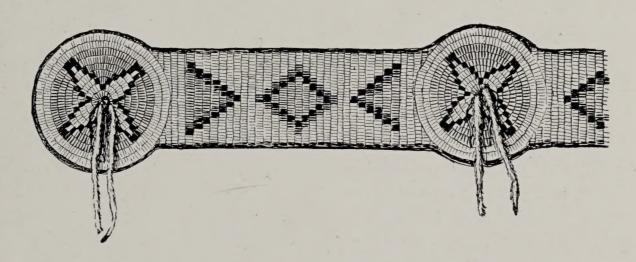
Some of the tribes using the straight parallel method, sew down the strings of beads at regular intervals, giving their work a banded, or ridged appearance (Fig. 2) in contrast to the uniform surface of that sewed at irregular intervals.

In this case the design is built up by laying down one of these bands at a time, the uniform width kept by taking the same number of beads for each string. Ten and twelve are the usual numbers, resulting in a

band about ½ inch wide. These bands and their bead units are also the main measuring units in laying out the design, as a little study of the specimens will show.

The explanation for this banded beadwork is found in the original quillwork. The technique of that process is described in another part of this booklet. Quills were not strung like beads but were dyed in assorted colors, then flattened out and laid on in bands of uniform width and color. Thus a given band of color followed the contour of the design, whether curved or straight (Fig. 3). In any case, the uniform bands gave a lined, or ribbed surface. This is just what we find in some beadwork, though the beads are strung and handled in a different way from quills. The Indian woman merely substituted beads into the old quill pattern.

On the other hand, the bead embroidery of the Ojibway seems to have had a different history. The earliest known form was the outlining of designs in beads (Fig. 4). Many beautiful patterns produced in this way are to be seen in the Woodland Hall (Fig. 18). According to tradition this was followed by filled-in patterns as in Fig. 17 and finally by full beaded backgrounds where the whole surface is covered. It is probable that this form also originated in a quill technique, for the older forms of quillwork among the Woodland Indians seem to have been outline designs on birchbark, some examples of which are on exhibition.



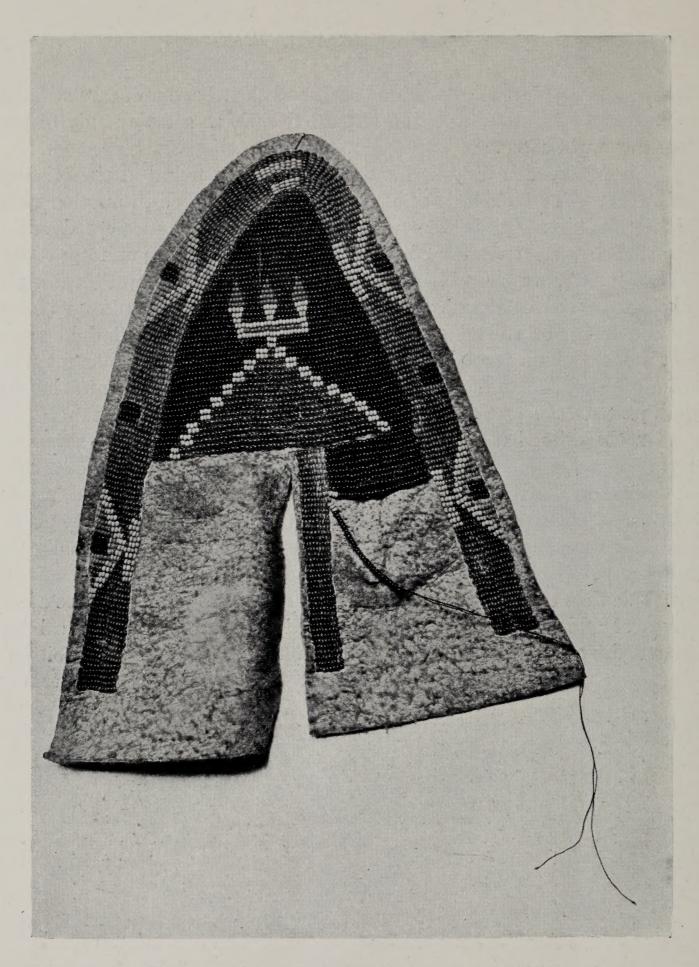


Fig. 1. A Moccasin Upper in Process of Beading

The uppers of moccasins are beaded before they are sewed to the soles. This piece was secured from an Assiniboin woman to show how the beads are laid on in constructing a design. The outer border is built up by two bands, seven beads wide; between these, over the toe, the strings of beads are laid on parallel. The colors are: ground in border, pale green; ground in toe, bluish green; figures in blue, yellow, ruby, orange. Specimen may be seen in the Assiniboin case, Plains Indian Hall. 50-4331)

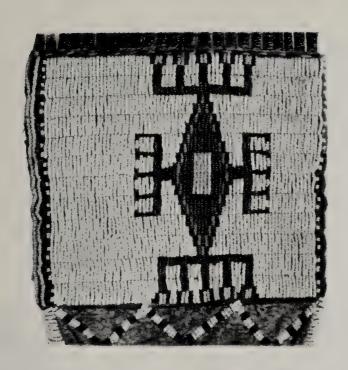


Fig. 2. Bead embroidery in bands resembling quillwork.

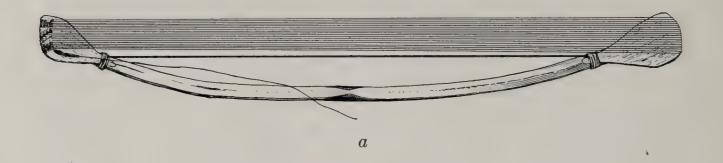


Fig. 3. An example of quill embroidery.





Fig. 4. Leggings embroidered with outlines in beads. See Ojibway Collection.



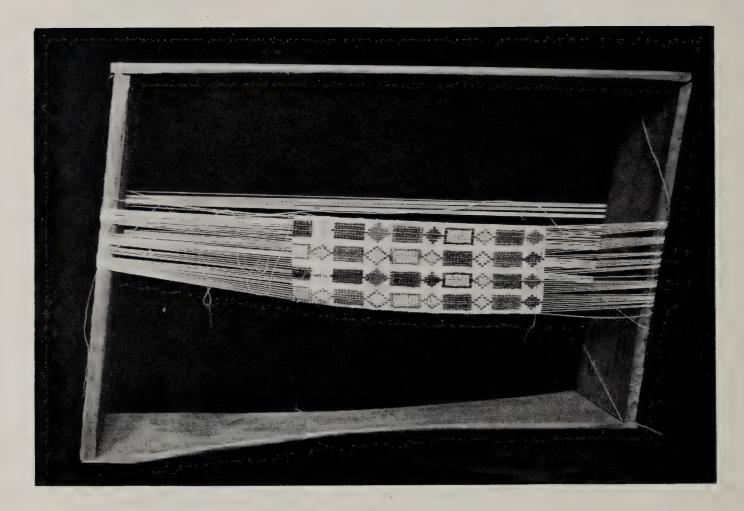


Fig. 5. Weaving Frames

- (a) A weaving bow. This is no doubt an old and original method of bead weaving that still survives in the form shown here. Quill bands (Fig. 10), the forerunners of beaded bands, are woven on similar bows.
- (b) A bead weaving frame. The warp threads are wrapped around the frame to the desired breadth of girdle or band. Weaving then proceeds as in Fig. 8a or 8b, until a band of the desired length is obtained, when the warp threads are cut and trimmed into end fringes.



Fig. 6. An unfinished beaded band with wooden heddle

This is shown as mounted in the Museum case, but in use there are no supporting parts, only the heddle and the threads. One end of the warp is made fast to any convenient object and the other to the belt of the weaver, who can thus hold the warp tight as the heddle is manipulated. There is reason to believe that this heddle is of French Colonial origin and so not an invention of the Indian. See Sauk and Fox collection.

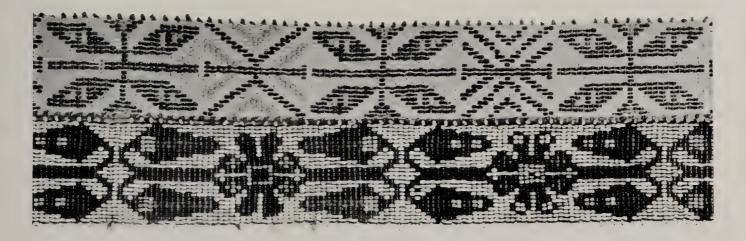


Fig. 7. Part of a beaded garter woven with a heddle similar to Fig. 6

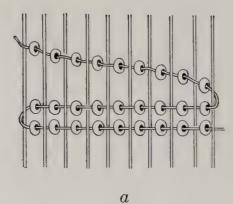
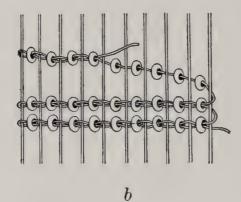
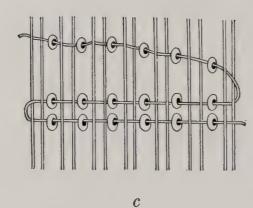


Fig. 8. Types of Bead Weaving.

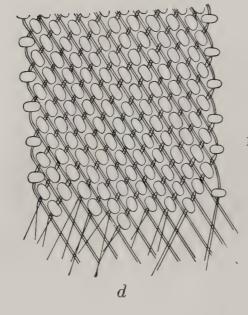
(a) Single weft bead weaving. After the warp threads are stretched, a single thread, with needle, is passed through as shown.



(b) Double weft bead weaving. In this case the thread is passed through the beads simultaneously and then laid upon the warp after which the needle is passed back through each bead on the other side of the warp.



(c) Double warp. Here the warp is often manipulated by a heddle as in Fig. 6. The weft thread is strung with the correct number of beads and then passed between the warp and the beads properly space; the whole procedure is as in loom weaving.



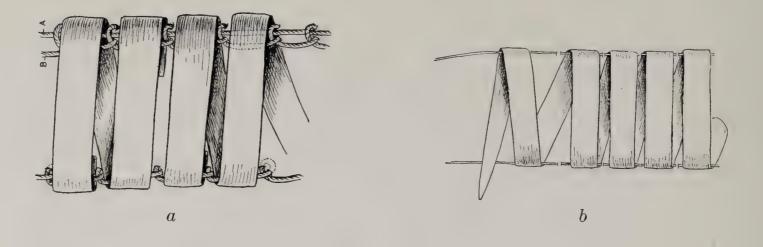
(d) Weaving with diagonal threads, a form frequently used in long narrow bands.

BEAD WEAVING

This type of beadwork is now popular and spreading rapidly among the Indians and our own people. Its center of development seems to have been the Menomini Indians of Wisconsin. A weaving frame of some kind is necessary. Scarfs, garters, and belts are almost invariably the objects made by this process. Strong thread is wound around the frame like the warp in a loom. (Fig. 5). Cross threads (weft) are woven into these and it is upon these that the beads are strung. Menomini specimens show three types of weaving: (a) single weft, (b) double weft, and (c) heddle woven; a and b are woven on a frame without other help than a needle, but c requires some additional apparatus. The Sauk and Fox Indians use the heddle shown in Fig. 6.

The Shoshoni frequently use a bow for the frame (Fig. 5a), the elasticity of the bow keeping the threads stretched; but here the warps are not continuous. This bow-loom is interesting because it seems to be the original loom upon which quill weaving was done, for again we find that a quill technique was the parent of bead weaving.

An interesting form of bead weaving is found among the Seminole, Yuchi, and other southern Indian tribes. Handsome belts, girdles, and garters are woven of commercial yarn. The warp and weft are diagonal and on them at intervals are strung beads. In some cases the warp and weft are white threads and the beads laid in in design patches, around which the bands of different colored yarns, all woven together. These make a unique and striking product. But of much greater interest is the use of horsehair in this diagonal weaving, with an entire beaded surface. The fine stiff hairs hold the beads apart and permit the light to pass through, greatly enhancing the value of the composition. The manner of weaving is shown in Fig. 8d. The same technique, but upon thread, is used by all the Woodland tribes for long narrow bands of beadwork and even occurs in some modern beadwork from Central America (Second Floor). The latter have still another variety in which the weft is carried across the warp, V-like, resulting in a band with a central rib.



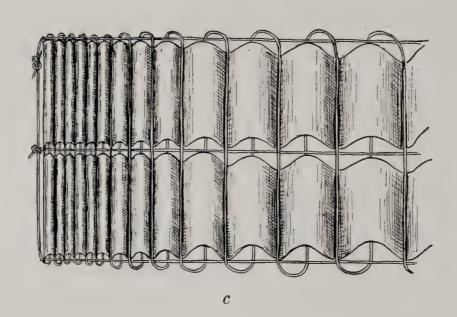


Fig. 9. Technique of Quillwork

- (a) In this technique, the quills are laid on in rows or bands. Designs are worked out by changing the color of the quills. The ends of the quills on the lower edge of a band are held in place by a string of sinew, or thread, a, running across the surface of the leather to be decorated, with another thread, b, going in the same direction but bassing under the first thread through the surface of the leather, back over the first thread and under itself, thus forming a loop between each quill. The thread holding the upper end of the quills in place, is threaded through the surface of the leather in oblique direction, from left to right (assuming that the work is started from the right hand side) crossing under itself on to the next space between the quills. This is practically the same stitch as that employed for the lower edge, omitting thread a.
- (b) In this process the surface is similar to that for a but the stitch is simple. The thread is passed through the leather and back again between each quill.
- (c) Warp threads are strung on a weaving bow; the quills are flattened and passed through the weft, like a ribbon. When the wefts are driven down close, all threads are concealed.

QUILLWORK

Quillwork seems to have been more widely spread than beadwork; in fact, it was almost universal throughout Canada and eastern and central United States. From remarks of early explorers we infer that quillwork was found among the Indians of Manhattan Island.

The quill of the porcupine is the universal material, though occasionally bird quills were substituted. First the quills were dyed, then flattened, folded to the right length and sewed down by a concealed stitch. These stitches vary a great deal, even in the same tribe. A few of the most common are shown in the figures.

But quills are also used in weaving, as stated. In this case the warp threads of sinew are stretched on a bow, somewhat as in the figure for bead weaving, the flattened quills are passed around the weft and driven up close, resulting in a charming texture. Designs are formed by introducing different colored quills.

If a close study of all the forms of quill and beadwork is made, it will appear that woven quillwork is the parent of all, for the manner of sewing quills down to the skin is such that the relation of quill and thread loops is similar to their relation in the woven quill band. It is difficult to conceive how the curious method of laying these quills in rows and bands could have developed except in imitation of woven quillwork.

While glass beads are modern, there was some bead weaving before 1492. The famous wampum belts were woven. But there were other tribes who cut sections of quills that were treated precisely as the long wampum shell bead by the Iroquois. It is, therefore, a fair assumption that the wampum bead is a development from quills and the wampum belt an outgrowth of quill weaving. There is still a great deal to learn from the study of Indian quill and beadwork to which this little book is but an introduction.



Fig. 10. Quill woven bands and a bag decorated with the same. See wall case, south side of Woodland Hall.

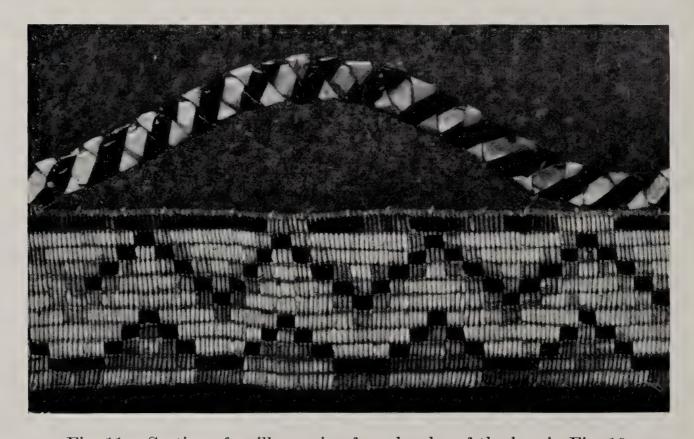
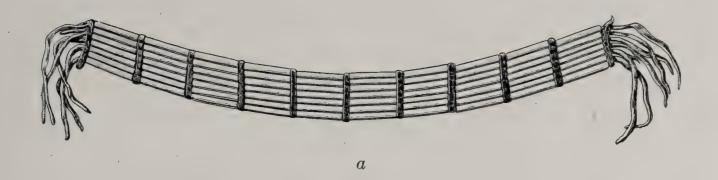


Fig. 11. Section of quill weaving from border of the bag in Fig. 10



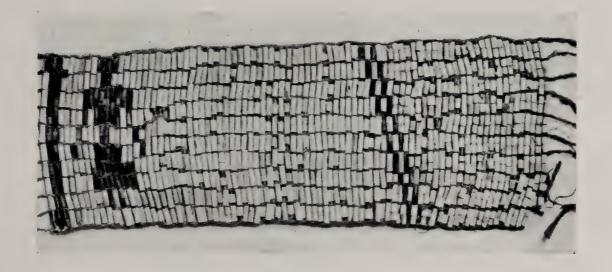


Fig. 12. Examples of Bead Weaving

b

- (a) A bead necklace. These long tube-like glass beads are said to replace similar sections of quills. Shoshoni case, Plains Indian Hall.
- (b) Wampum belt. The famous wampum belts of the Iroquois are examples of bead weaving. The form of bead and the general appearance of the belt suggest quill weaving on the one hand and the bead necklace on the other. Woodland Hall.

DESIGNS

The designs among the Plains Indians are justly celebrated for their geometric character. To be fully appreciated they must be seen in color instead of in mere outline as in this booklet. They were intended for costume decoration and used out-of-doors in the open and the sunlight. Under such conditions the colors tended to blend into their surroundings and to lose much of their harshness. The true place such decorations held in Plains Indian life is suggested by the accompanying photograph of two Blackfoot women.

A general similarity is found among the beaded designs for all the Plains tribes, but the choice of colors for background differs. Some of the finest work comes from the Dakota (Sioux) who use white as the background; however, some forty years ago they used a light blue.

The Indians around the Great Lakes seldom use geometric patterns, but incline to floral motives. Naturally, in their woven work they somewhat conventionalize these floral patterns, but in all cases the plant forms are obvious. On the other hand in their embroidery, where there are no limitations, they attain highly realistic effects. (See the Menomini and Ojibway cases.)

The contrast between these two types of beadwork will appear if you closely examine the collections in the Eastern Woodland Hall and then those in the Plains Indian Hall.

NAMES FOR DESIGNS

The Indian bead workers often have names for their designs to facilitate discussion among themselves. Many of these names have highly figurative meanings that suggest true symbolism. The best series of such design names as used in beadwork was collected for this Museum from the Arapaho Indians, a list of which is given on the following page. All of these designs are from specimens in the Museum and the names were supplied by the maker of each piece. A typical series of these are on exhibition in the Arapaho cases, Plains Indian Hall. Additional examples of design interpretation are shown in the Dakota cases. Naturally, tribes differ in the use of these names and not infrequently groups of workers in the same tribe have different names for the same design.

BLACKFOOT WOMEN IN FULL DRESS

This photograph shows the place beadwork holds in the life of the Plains Indians. However, to fully appreciate its decorative value one must see it in the original colors and settings.



Fig. 13. Beaded Pouches—Dakota

It should not be inferred that when we find names for beaded designs, the makers produce them solely for mystic reasons. That would be far from the truth, for beadwork is, above all, decorative. The Indian woman toils because it is a pleasure to produce something beautiful and chooses her colors and designs to that end. Yet she may choose a design which because of its name and symbolic associations, appeals to her as especially appropriate to the occasion. For example, the Arapaho moccasin in Fig. 14 is beaded around the edges, but has its front surface traversed by a number of quilled lines. The white beadwork represents the ground. Green zigzag lines upon it are snakes. The quilled lines represent sweathouse poles. These lines are red, blue, and yellow, and the colors represent stones of different colors, used for producing steam in the sweathouse. At the heel of the moccasins, which is not shown in the figure, are two small green squares. These represent the blankets with which the sweathouse is covered.

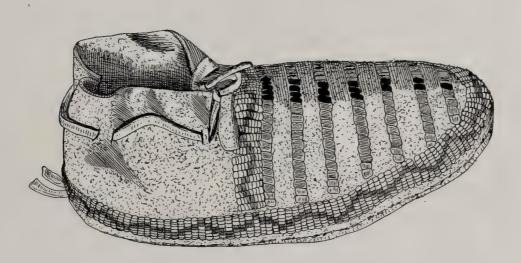


Fig. 14. A Child's Moccasin: Arapaho. The decoration has a symbolic meaning.

The design of a snake was embroidered on this moccasin in order that the child wearing it might not be bitten by snakes. The symbols referring to the sweathouse were embroidered on the moccasin in order that the child might grow to the age at which the sweathouse is principally used; namely, old age.

Thus we see how colors and established designs may be chosen for ornamental reasons and yet adapted to a wish or idea in the mind of the worker. But not all examples of beadwork have this significance for the same artistic excellence may be sought and attained with no thought of design names and the ideas they may call up.

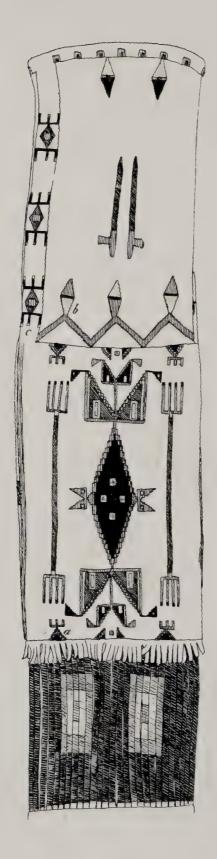


Fig. 15. Design from a Dakota Pipe Bag

The bag is in the case for Dakota art, Plains Indian Hall. This is a good example of how a pictorial meaning may be read into a design. Thus the maker of this bag made the following statement: The whole represents a battle scene. The white is snow. The two long green lines are to indicate the flight of arrows. The projecting lines at the end represent the wounds made by the The arrow point is represented by the arrows. triangular figures opposite the projecting lines, these being shown again as attached to the point of the arrow (a). The large central figure is the body of a man: the diamond-shaped portion representing the trunk, and the appendages, the head, arms, and legs. The dark blue color of the trunk-figure implies that the man is dead. The small white rectangles enclosing a red spot represent the hits or wounds that brought the man down. On the upper part of the bag the border figure (c)represents a victory in which the owner's horse, represented by the green diamond-shaped figure, was wounded, as shown by the red area within the horse symbol; b represents a feather, and implies that the owner of the bag was entitled to wear an eagle feather in his hair as a sign that he had killed an enemy. The figures of the pipe indicate the owner's right to carry the official peace pipe.

The parts of this design are not new and so not original with the maker of the bag, but were selected by her to express these ideas and events, relating to the life of the man for whom she made it. Even the choice of designs was not wholly original, for it was the custom of her people to look upon certain designs as having a fixed meaning. Thus by looking at his pipe bag another Indian might read the deeds of the owner.

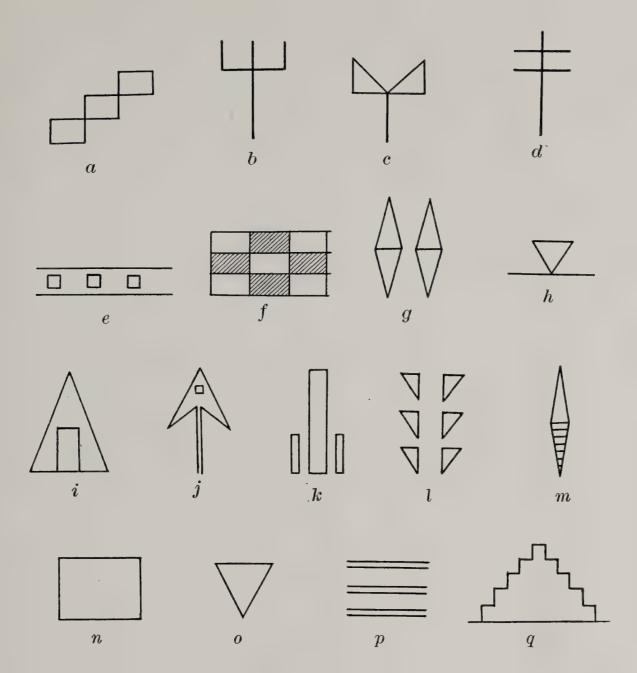


Fig. 16. Design Elements used by Dakota women in constructing beadwork.

Each design unit has a name, used in giving instruction to beginners. The names in use twenty-five years ago are as follows:—

a,	Twisted	g, Feathers	m,	Whirlwind
b,	Full-of-points	h, Leaf	n,	Bag
с,	Forked tree	i, Tent	0,	Pointed
d,	Dragon-fly	j, Arrow	p,	Trails
e,	Filled up	k, Three-row	q,	Cut-out
f	Trine	1 Vertebræ		



Fig. 17. Ojibway or Chippewa Beadwork

These two types of bandolier are fine examples of bead weaving (a) and embroidery (b). For other examples see Ojibway and Winnebago cases, Eastern Woodland Hall.

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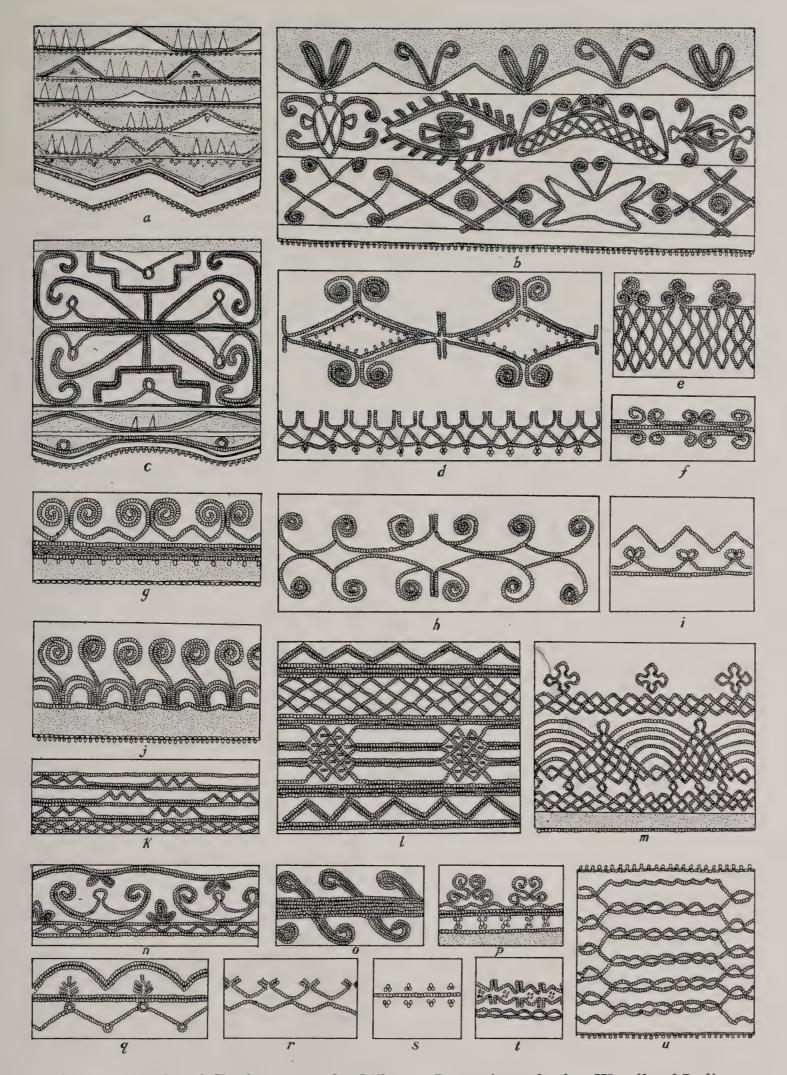
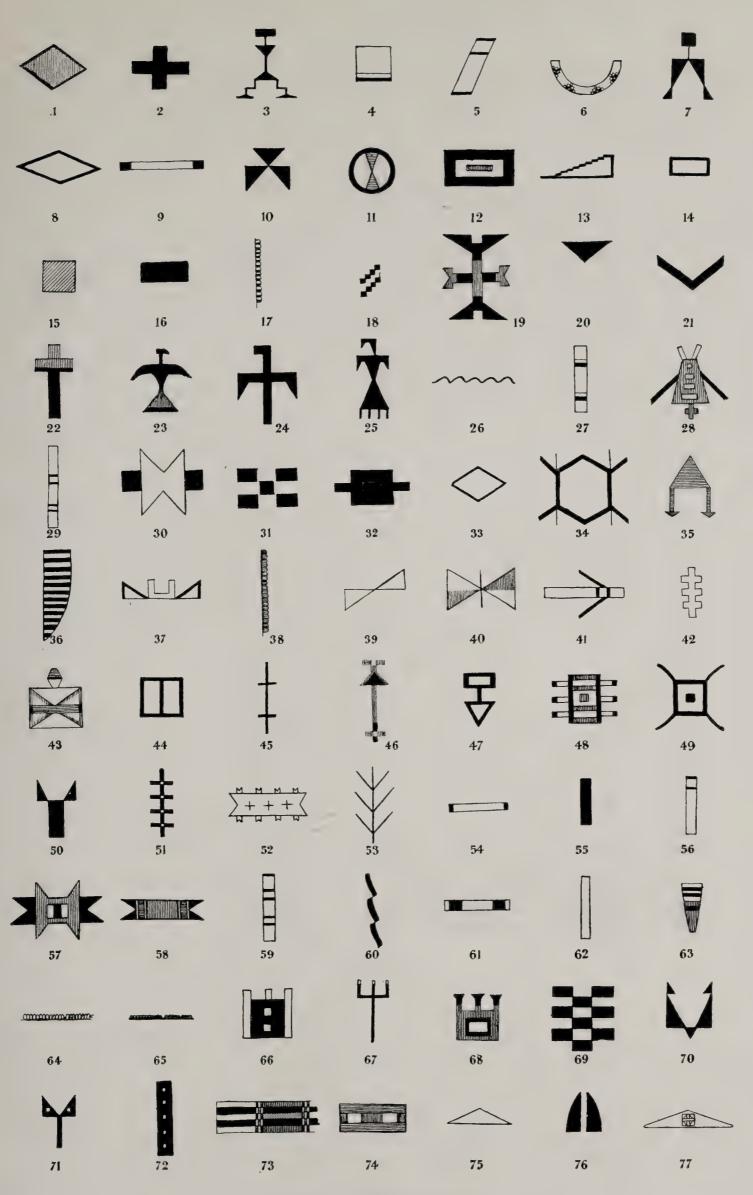


Fig. 18. Beadwork Designs from the Ojibway, Iroquois, and other Woodland Indians

ELEMENTS OF BEADED DESIGNS FROM EXAMPLES IN THE MUSEUM

The design elements in the following plates were selected from bead and quillwork collected among the Arapaho Indians by Professor A. L. Kroeber in 1900. Most of the objects from which they were taken are on exhibition. As a whole they represent the design material available to an Arapaho bead worker. They are also fairly representative of the Plains Indians as a whole. By custom these designs had come to have definite names and meanings, a list of which is added.

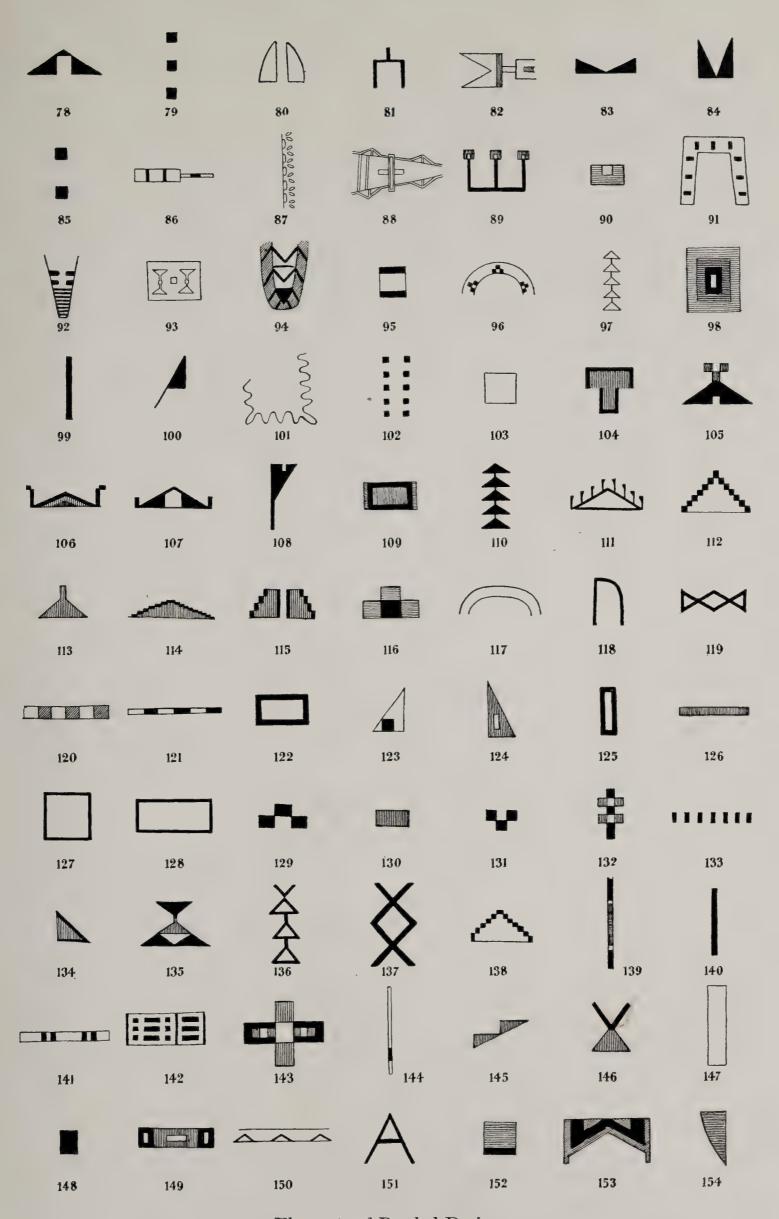
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Figure		Figure	
1	Person	40	Butterfly
2	Person	41	Butterfly
3	Person	42	Butterfly
4	Person sitting	43	Butterfly
5	Person standing	44	Beetle
6	Persons in tent or sweathouse	45	Dragon-fly
7	Mythic dwarf	46	Dragon-fly
8	Navel	47	Dragon-fly .
9	Navel string	48	Cricket
10	Heart and lungs	49	Spider
11	Head	50	Crayfish
12	Eye	51	Centipede
13	Eye	52	Centipede
14	Eye	53	Centipede
15	Track	54	Leech
16	Buffalo	55	Caterpillar
17	Wolves	56	Caterpillar
18	Rats	57	Caterpillar
19	Eagle	58	Caterpillar
20	Eagle	59	Caterpillar
21	Eagle	60	Worms or maggots
22	Eagle	61	Worm
23	Thunderbird	62	Worm
24	Magpie	63	Worm
25	Swallow	64	Worms
26	Snake	65	Game, variety of animals
27	Snake	66	Bear foot
28	Lizard	67	Bear foot
29	Lizard	68	Bear foot
30	Lizard	69	Buffalo intestine
31	Turtle	70	Buffalo hoof
32	Turtle	71	Buffalo hoof
33	Turtle	72	Buffalo track
34	Turtle	7 3	Buffalo path
35	Frog	74	Buffalo path
36	Fish	75	Buffalo wallow
37	Bee	76	Buffalo horns
38	Bees	77	Mythic cave of the buffalo
39	Butterfly		



Elements of Beaded Designs

ELEMENTS OF BEADED DESIGNS FROM EXAMPLES IN THE MUSEUM—ARAPAHO

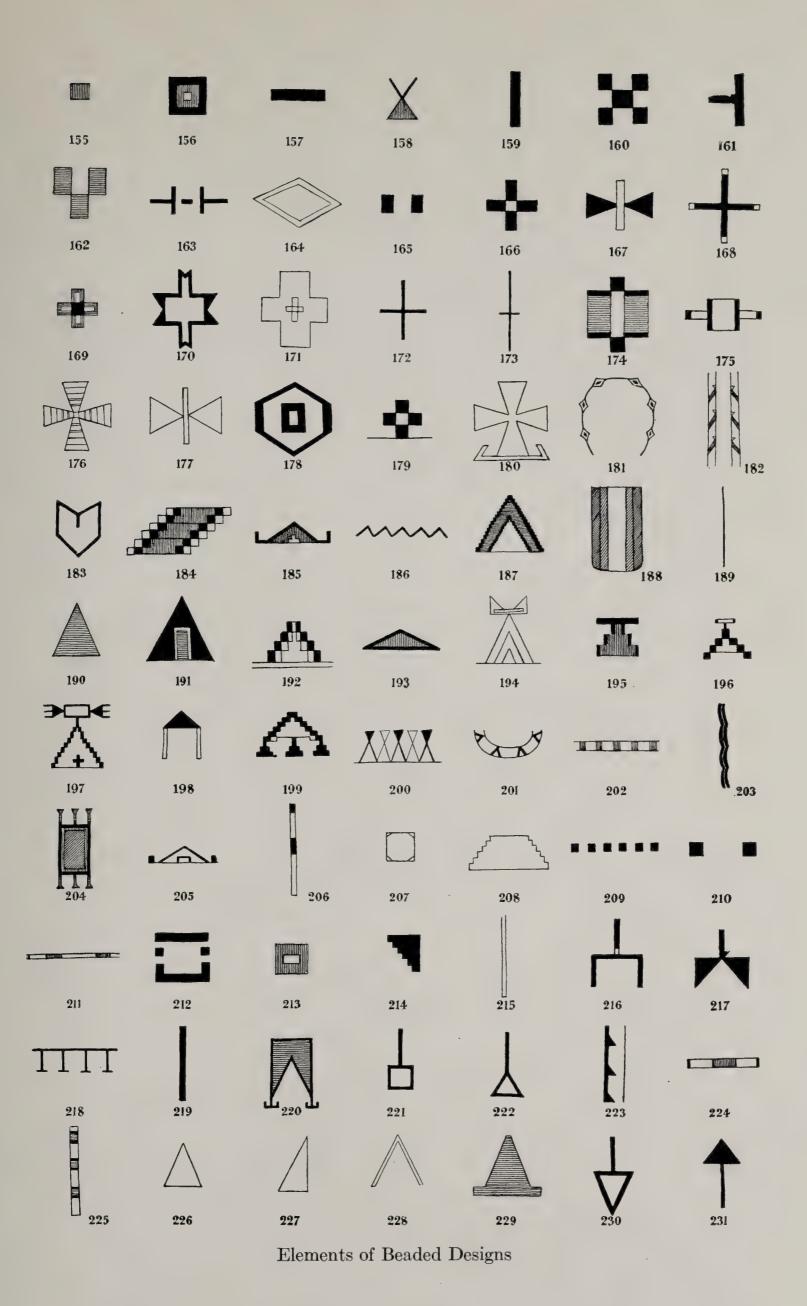
Figure		Figure	
78	Cattle track	117	Mountain
79	Cattle track	118	Mountain
80	Horse cars	119	Mountains
81	Horse track	120	Mountains
82	Elk leg	121	Mountains
83	Elk hoof	122	Mountain
84	Deer hoof	123	Snow-covered mountain
85	Rabbit tracks	124	Snow-covered mountain
86	Beaver rib	125	Valley or canyon
87	Scales on beaver tail	126	The earth
88	Beaver dam and huts	127	The earth
89	Turtle claw	128	The earth
90	Turtle egg	129	Dirt, clay
91	Snake skin markings	130	Rocks
92	Horned toad skin markings	131	Rocks
93	Joints and stomach of frog	132	Rocks
94	Markings of lizard	133	Rocks
95	Bee hole	134	Rocks
96	Ant hill	135	Rocks
97	Ant hills	136	Rocks
98	Ant hill	137	Rocks
99	Ant path	138	Rocks
100	Dragon-fly wing	139	Rocks
101	Spider web	140	Path
102	Centipede-tracks	141	Path
103	Worm hole	142	Path
104	Tree	143	Crossing paths
105	Trees on mountain	144	Holes in a path
106	Trees on mountain	145	Holes in a path
107	Trees on mountain	146	Path going over a hill
108	Leaf of "yellow herb"	147	River
109	Willow leaf	148	River
110	Mushrooms	149	River
111	Cactus	150	River with islands
112	Mountain	151	River
113	Mountain	152	Spring
114	Mountain	153	Lake
115	Mountain	154	Lake
116	Mountain		



Elements of Beaded Designs

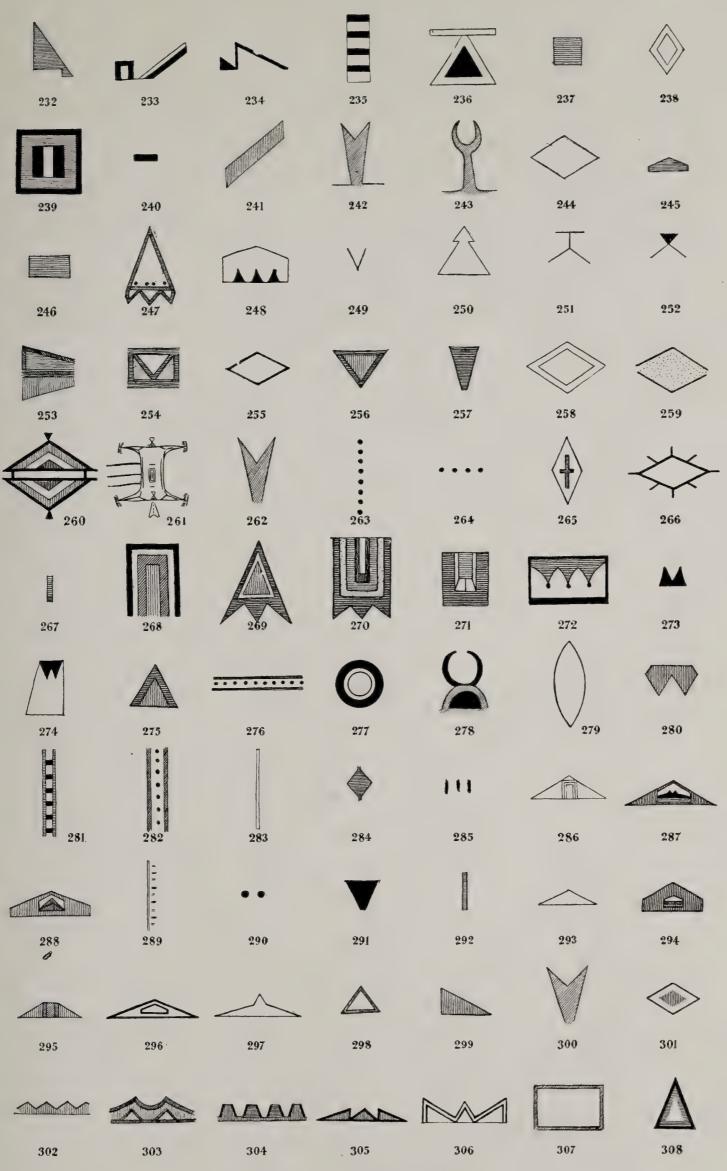
ELEMENTS OF BEADED DESIGNS FROM EXAMPLES IN THE MUSEUM—ARAPAHO

Figure		Figure	
155	Lake	194	Tent
156	Seum	195	Tent
157	Sun	196	Tent
158	Sunrise	197	Tent
159	Sun rays	198	Tent
160	Star	199	Tent
161	Star	200	Camp circle
162	Star	201	Camp circle
163	Star	202	Camp circle
164	Star	203	Boundary of habitation
165	Star	204	Brush hut
166	Star	205	Brush hut
167	Star	206	Pole of sweathouse
168	Morningstar	207	Covering of sweathouse
169	Morningstar	208	House
170	Morningstar	209	Fence
171	Morningstar	210	Rock monuments
172	Morningstar	211	Rock monuments
173	Morningstar	212	Soft bag
174	Morningstar	213	Box
175	Morningstar	214	Knife case
176	Morningstar	215	Sinew
177	Morningstar	216	Rack for saddlery
178	Morningstar	217	Rack for saddlery
179	Morningstar at the horizon	218	Rack for meat
180	Morningstar with rays	219	Rope
181	Constellation	220	Saddle blanket
182	Milky way	221	Man's stirrup
183	Cloud	222	Woman's stirrup
184	Cloud	223	Lance
185	Cloud	224	Bow
186	Lightning	225	Arrow
187	Lightning	226	Arrow point
188	Rainbow	227	Arrow point
189	Rain	228	Arrow point
190	Tent	229	Arrow point
191	Tent	230	Arrow point
192	Tent	231	Arrow point
193	Tent		



ELEMENTS OF BEADED DESIGNS FROM EXAMPLES IN THE MUSEUM—ARAPAHO

Figure		Figure	
$\overset{\circ}{2}32$	Arrow point	$\overset{\circ}{271}$	Bear foot
233	Pipe	272	Bear foot
234	Pipe	273	Bear ear
235	Gambling counters	274	Bear ear
236	Female dress	275	Bear den
237	Life, prosperity	276	Coyote tracks
238	Life, prosperity	277	Buffalo eye
239	Life, prosperity	278	Buffalo skull
240	Life, prosperity	279	Buffalo, scrotum
241	Thought	280	Buffalo dew-claw
242	Person	281	Buffalo track
243	Person	282	Buffalo track
244	Person	283	Buffalo path
245	Person	284	Buffalo wallow
246	Person	285	Buffalo dung .
247	Persons in tent or sweathouse	286	Mythic cave of the buffalo
248	Persons in tent or sweathouse	287	Mythic cave of the buffalo
249	First human beings	288	Mythic cave of the buffalo
250	Woman	289	Abundance of buffalo
251	Imaginary human figure	290	Horse tracks
252	Imaginary human figure	291	Wild cherry
253	Body	292	Fibrous water plant
254	Body	293	Mountain
255	Navel	294	Mountain
256	Heart	295	Mountain
257	Matted hair	296	Mountain
258	Eye	297	Mountain
259	Eye	298	Mountain
260	Eye	291	Mountain
261	Buffalo	300	Mountain
262	Buffalo	301	Mountain
263	Buffalo	302	Mountains
264	Coyotes	303	Mountains
265	Lizard	304	Mountains
266	Frog	305	Mountains
267	Water beetle	306	Mountains
268	Bear foot	307	Mountains
269	Bear foot	308	Mountain peak
270	Bear foot		

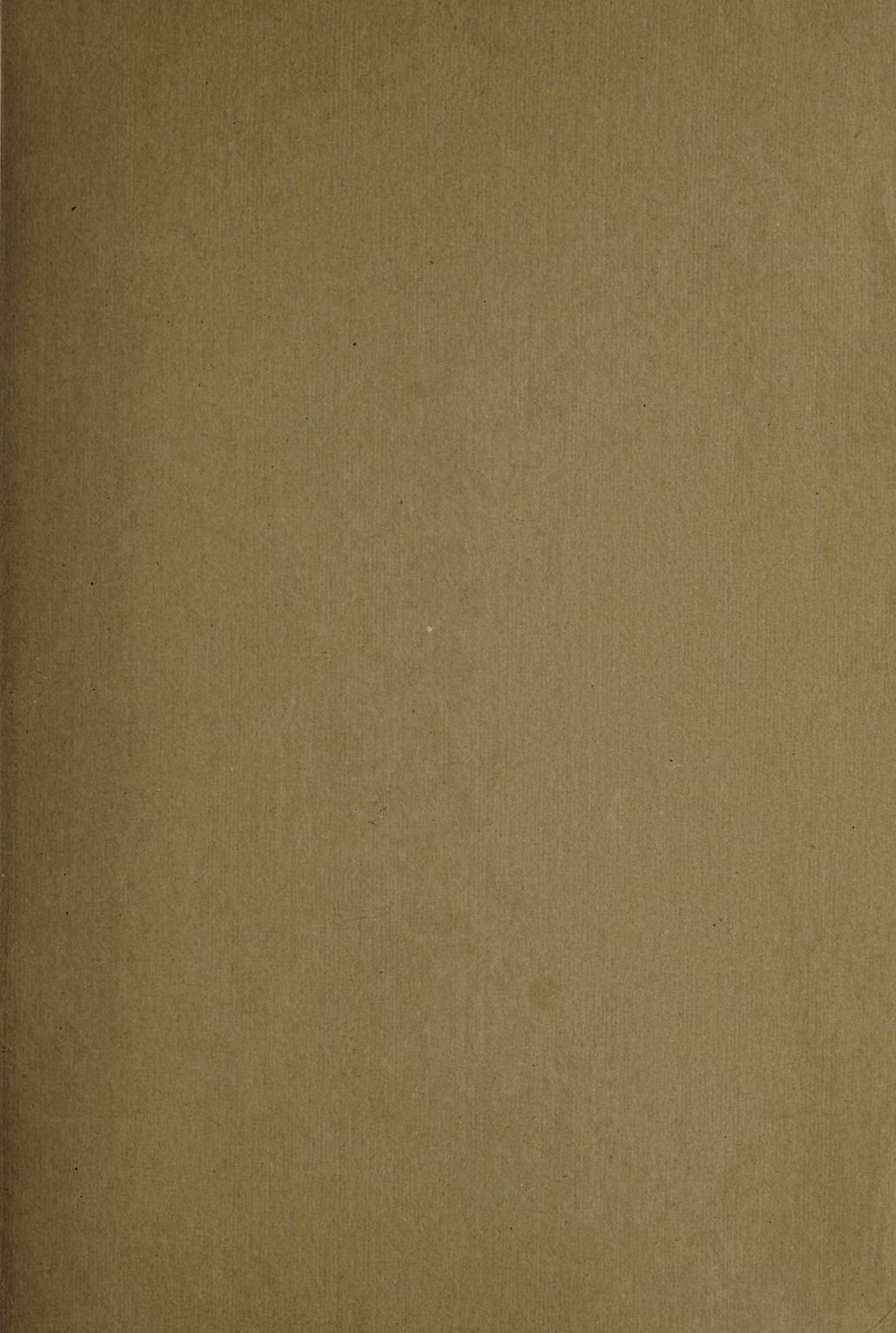


Elements of Beaded Designs











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